

# PATENT ABSTRACTS OF JAPAN

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(71)Applicant : NITTO DENKO CORP

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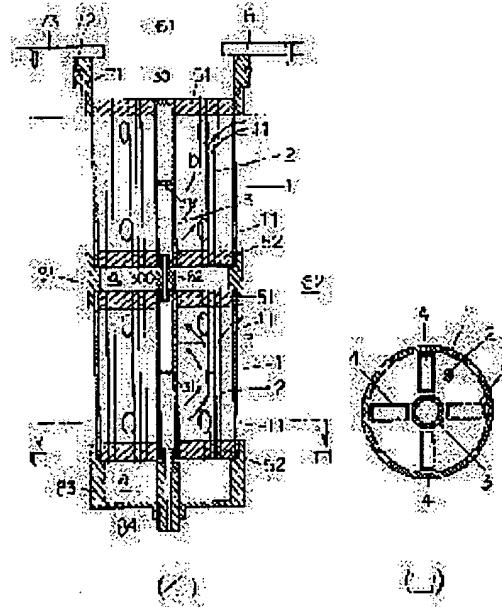
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## (54) VERTICAL TYPE HOLLOW FIBER MEMBRANE MODULE

### (57)Abstract:

PURPOSE: To obtain a module stable for bending and torsion even when a hollow fiber membrane is washed by an air scrubbing method by providing a perforated air feed pipe in the center of an external cylinder and radially providing catchment pipes for the perforated air feed pipe.

CONSTITUTION: A perforated air feed pipe 3 is provided in the central position of a protective cylinder 1. Thereby, the pipe itself is low in mechanical strength but bending strain and torsional strain are practically regulated to the position of zero and therefore breakage is prevented. Further, catchment pipes 4 are radially provided around the perforated air feed pipe 3. Thereby, the cross-sectional secondary moment of the catchment pipes 4 is made large for bending moment and torsional moment and bending deformation and torsional deformation of a module are made small.



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(54) VERTICAL TYPE  
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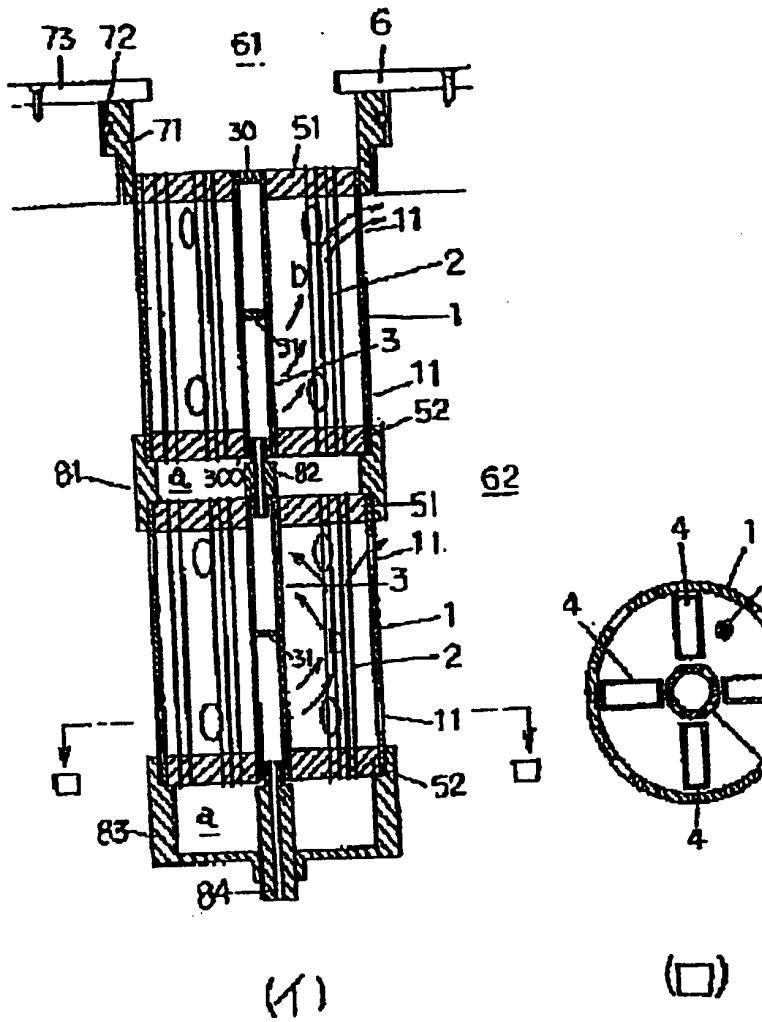
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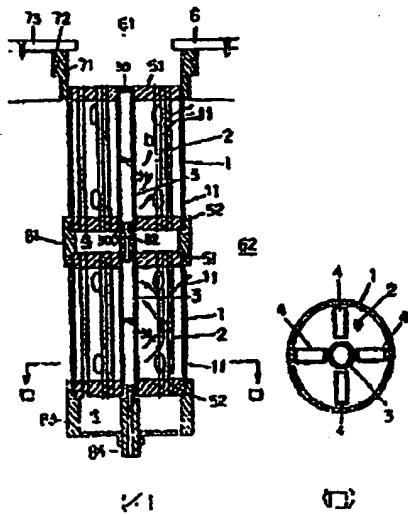
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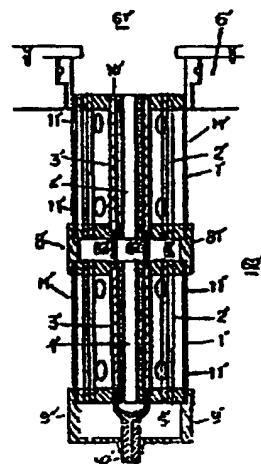
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## フロントページの書き方

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